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(54) Compact with pop-up tray operated by hinged cover.

(57) A makeup compact includes a base (12,72) and has a frame or insert (36,96) secured thereto. The frame features flexible downward wings (44,46,104) having retaining ribs (50,106) across the lower ends thereof. A cosmetic tray (56,108) may have a top flange (58,110) adapted to sit in the frame and complementary grooves (64,112) on the outside of

the tray snappingly to receive the ribs so that normally the tray is held snugly down inside the frame. The compact cover (16,76) is hinged and is shaped in a portion (22,82) adjacent the hinge so that when the compact is forced open beyond its normal open position said portion forces the tray up out of its frame to make it available for replacement.

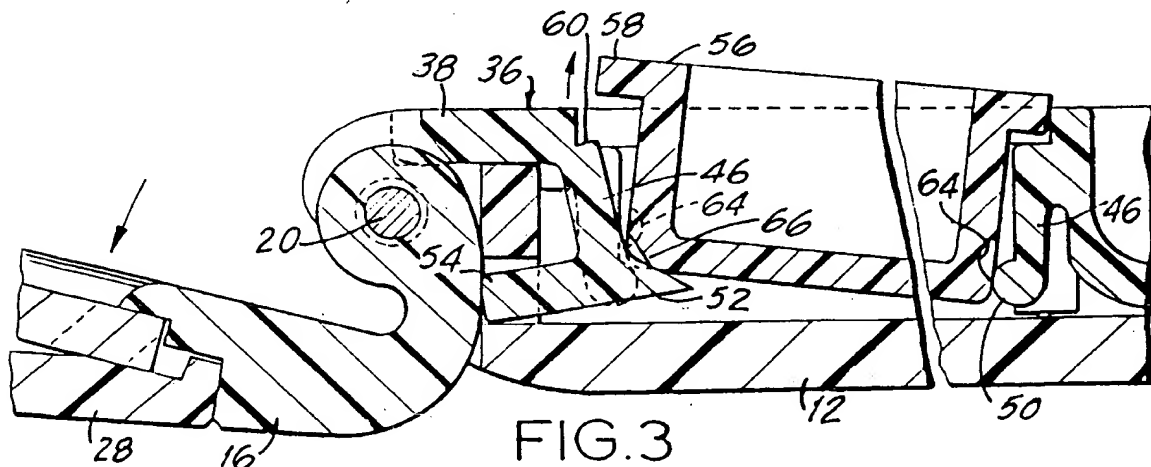


FIG.3

EP 0 574 107 A1

This invention relates to a makeup compact having a cosmetic tray which may be popped out of the compact by using the hinged cover as a force-applying lever.

DE-A-3,626,743, describes a compact having a tray which may be popped out by a special Z-shaped lever including a foot which underlies the tray and an operating tab which, when pressed, pivots the foot upward to displace the tray from the container base.

US-A-1,597,378 discloses a compact in which the cover latch is operated by a button and by pressing the button further a wedge attached to the button may be driven under the tray to pop the tray out of the compact base.

The above prior arrangements for popping the powder tray out of a compact involve the manual pressing of a button or the like to eject the tray. Often this requires considerable force on the button which is not an easy operation for an aged or weak person.

The present invention relates to a compact which uses the leverage of a rather sizable cover to drive the cosmetic tray out of its position in the compact. The compact comprises a base, a hinged cover and a frame or insert secured to the base and featuring flexible downward wings having retaining means on the lower ends thereof. A cosmetic tray has a top outward flange and sits in the frame and has a complementary retaining means about its sides to engage the retaining means on the outside of the tray so that normally the tray is held snugly down inside the frame.

One of the wings is provided on its lower end with an outward and upwardly formed wedge, and the opposite side of that wing is formed with a button which extends through an opening in the compact base adjacent the cover hinge. In operation, the cover may be forced open beyond the limit of its normal travel so that a specially shaped part of the cover adjacent the hinge engages the button to depress the button, moving the wedge to drive up the tray, popping it out of its frame.

In a simpler modification a specially shaped part of the cover adjacent the hinge directly engages the flange of the tray from below and forcing the cover past the normal open position thereby levers the tray up away from the engagement of the retaining means.

Further features of the invention will be apparent from the following description and accompanying drawings, all of which disclose a non-limiting embodiment of the invention. In the drawings:-

Figure 1 is a top view of a compact embodying the invention with the cover partly broken and the base shown partly in broken lines;

Figure 2 is an enlarged, broken and fragmentary sectional view taken on the line 2-2 of Figure 1;

Figure 3 is a sectional view comparable to Figure 2 but showing the cover adjacent the hinge being used to drive the wedge inward, popping the tray out of its frame;

Figure 4 is a sectional view taken on the line 4-4 of Figure 2;

Figure 5 is a view similar to Figure 2 but showing a modified form of the invention; and

Figure 6 is a view similar to Figure 3 but showing the same modification.

A compact embodying the invention is generally designated (10) in Figure 1. It comprises a base (12) of any particular shape (oval being shown for illustration) having a recess (14) therein.

A cover (16) includes a hinge (18) which is pivoted to the base (12) by means of a pin (20). When the compact is not in use the cover (16) is held in the closed position by latch means (not shown) opposite the hinge. As shown in Figure 2, the cover adjacent the hinge is formed with a knee or cam means (22) for reasons which will appear. A mirror (24) may be inserted in the cover against a shoulder (26) and held down by a separate cover insert (28) which may be welded into the cover as at (30).

The base adjacent the hinge (20) is formed with a vertical wall (32) and an opening (34) for reasons which will appear.

A frame or insert (36) is formed with the same general shape as the recess (14). It includes a flange (38) which is welded to the top of the base, and a downward peripheral wall (42) which may be sectioned into separate wings (44) and (46) (Figure 4) divided by notches (48). The wings (44), except wing (46), are provided with inward ribs (50) for reasons which will appear, and the central wing (46) is provided with an inward wedge (52) which extends inward in the recess as shown. The wing (46) is stiffly flexible. The wing (46) is provided opposite the wedge (52) with rearward button (54) (Figure 2).

A moulded cosmetic powder tray (56) is provided and includes a cup-like element having an outward flange (58) around the upper end thereof. The frame (36) is notched out about the upper end thereof to provide a ledge as at (60) on which the flange (58) sits. The lower portions of the side walls (62) of the tray (56) are formed with inward grooves (64) adapted to receive the ribs (50) as shown releasably to hold down the tray in the frame. Both edges at the lower end of the tray may be bevelled off as shown at (66) to complement the shape of the wedge (52) (Figure 2). This makes it possible to reverse the tray.

The operation of the compact shown involves the opening of the cover (16) beyond its normal open position limit. In Figure 3, it is shown that when the cover is forceably opened past its normal

open limit, the knee (22) on the cover adjacent the hinge (20), engages the butt end of the button (54) to push in the stiffly flexible wing (46) and drive the wedge (52) inward. The wedge thus impinges against the bevelled area (66) and urges the tray upward. This causes the resilient wings (44) to flex outward as bottoms of the grooves (50) cam ribs (64) outward of the recess. This eventually leads to the release and upward popping of the tray (56). It will, thus, be seen that using the leverage of the cover (16), it is possible for the user easily to drive in the button (54) using a very nominal force on the cover.

When subsequently it is desired to install a new tray (56) into the frame (36), it is merely necessary to release the cover from the forceable position shown in Figure 3 to permit the wings (44, 46) to return to their normal vertical position. At this point the new tray (56) may be pressed into the recess. The ribbed ends of the wings (44) will snap into the grooves (50).

A modified form of the invention is shown in Figures 5 and 6 and generally designated (70). In outward appearance it is comparable to the compact of Figure 1. It comprises the base (72) of any convenient shape, oval being shown. The base has the recess (74).

A cover (76) includes a hinge (78) which is pivoted to the base (72) by means of pin (80). When the compact is not in use, the cover (76) is held in the closed position by latch means, not shown, opposite the hinge. As shown in Figure 5, the cover adjacent the hinge is formed with knee or cam means (82). A mirror (84) may be held in the cover against a shoulder (86) and clamped down by a separate cover insert (88) which may be welded to the cover at (90). The base adjacent the hinge is formed with a vertical wall (92) and a window (94) for reasons which will appear.

A frame or insert (96) fits against the top of the base in the recess (74). It includes a flange (98) which is welded to the top of the base as at (100) and a downward peripheral wall (102) which may be segmented as in the earlier embodiment to define flexible wings (104) provided with inward ribs (106).

As in the earlier embodiment, a cosmetic powder tray (108) is provided and includes a cup-like element having an outward flange (110) around the upper end thereof. The flange is of greater width than the flange (38) of the earlier embodiment. The flange (110) sits on the top of frame (96). The lower portion of the side walls of the tray are formed with inward grooves (112) adapted to receive the ribs (106), as shown, releasably to hold down the tray in the frame.

As shown in Figure 5, the frame (96) is notched out at (116) above the window (94) in the

base.

Referring now to Figure 6, the window (94) and the notch (116) are designed the pass the knee (82) as the cover pivots about pin (80). Normally, the knee (82) will come to rest on the underside of the flange (110) as the flange sits solidly in place as shown in Figure 5. When, however, the cover is forcibly opened further than the above-described position, the flange (110) will be urged upward by the knee (82) and the tray (96) will be uprooted out of the frame (102), the surface of the groove (112) camming the rib (106) inward to release the tray from its held-down position. The tray is thus available for replacement.

To ensure that the tray is not accidentally popped up as the knee contacts the flange (110), circular ribs (shown but not numbered) may be provided and extend inward from the top of the window (94). The knee can rest on these ribs and will pass them only after the cover is forced beyond them.

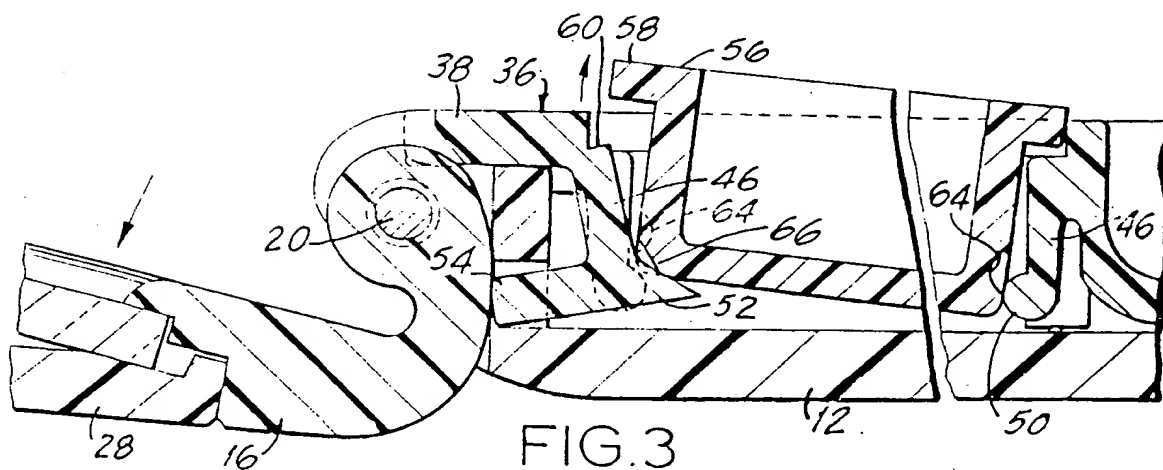
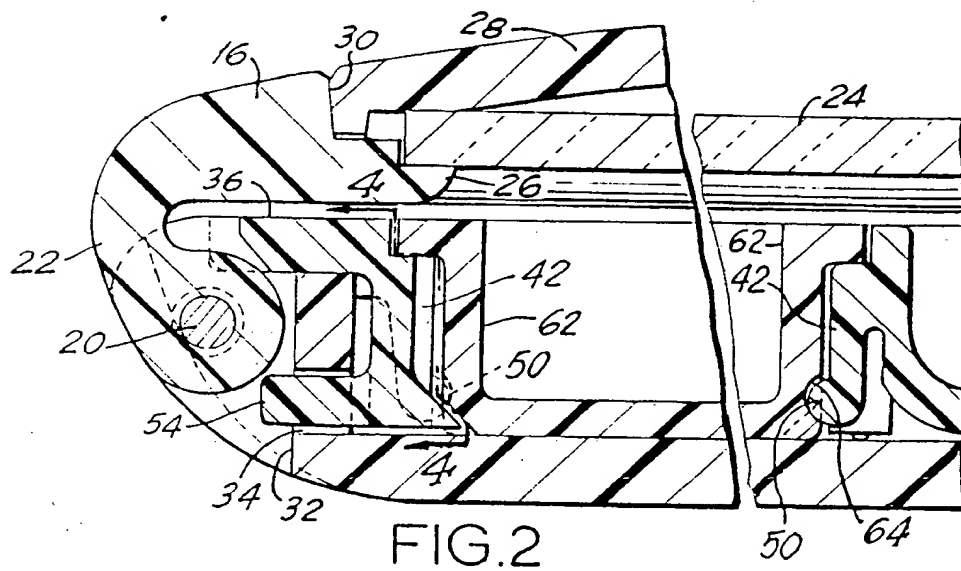
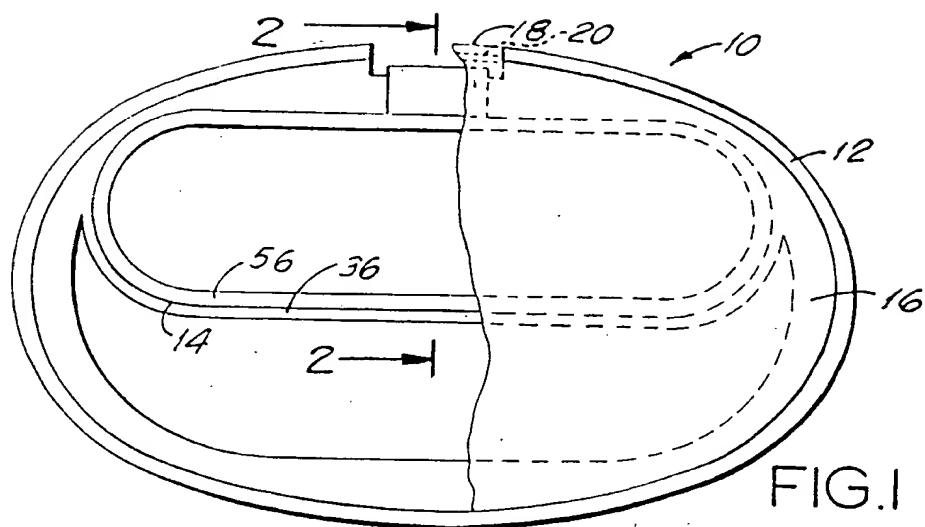
In inserting a new tray into the compact of Figures 5 and 6, it is merely necessary to press the new tray (96) downward in the frame (102) until it snaps into place as the ribs (106) engage in grooves (112). At this point, the flange (110) will rest on the top of the frame at (114).

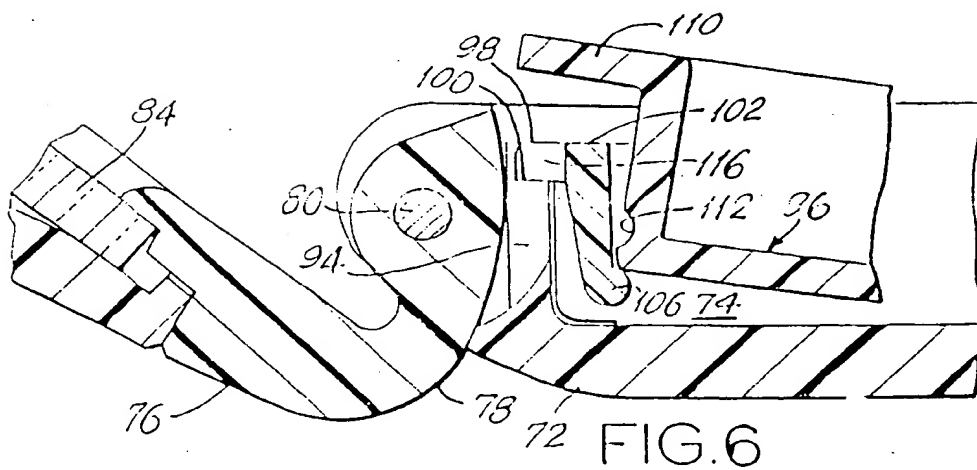
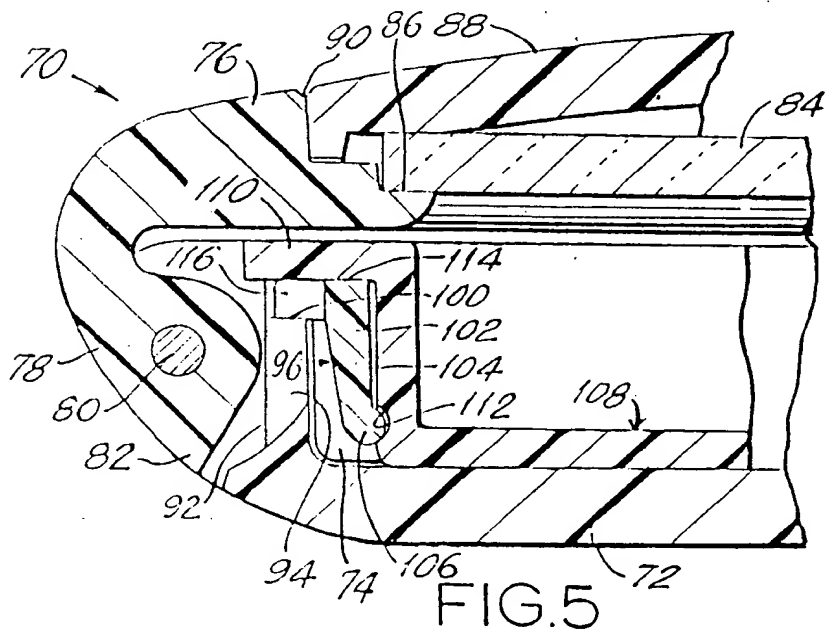
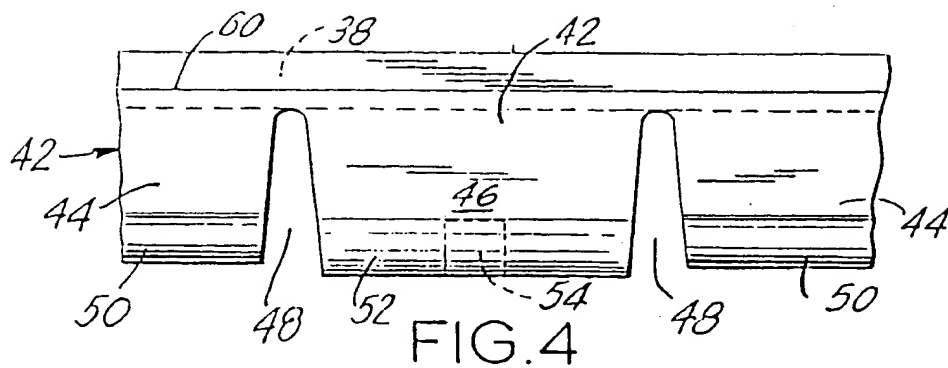
Thus, in the Figures 5 and 6 embodiment the direct engagement of the knee (82) with the tray (96) effects the popping up of the tray. While the earlier described version is preferred, the Figures 5 and 6 embodiment is somewhat less elaborate and may be preferred by some.

### Claims

1. A compact comprising base (12,72) having an upwardly facing recess (14,74), a powder tray (56,108) releasably retained in the recess, a cover (16,76) having knee or cam means (22,82) and hinged to one side of the base and means associated with the tray to assist in its removal whereby when the cover is opened beyond a usual limit of travel, the knee or cam means engages the means associated with the tray to drive the tray up out of the base.
2. A compact as claimed in claim 1 wherein a frame or insert (36) comprising said means associated with the tray is secured to the base and the frame has a downward resilient wall (42) comprising portions (44,46) having inward retaining means (50) at the lower ends thereof and a wedge (52) underlying the tray and a button (54) on the wall outward of the wedge and the cam means engages the button to drive the wedge inward to pop up the tray.

3. A compact as claimed in claim 2 wherein the downward resilient wall is segmented and the wedge and button are on opposite sides of the same segment and the inward retaining means are on the segments different from said same segment. 5
4. A compact as claimed in claim 2 or 3 wherein the base is apertured adjacent the hinge to allow the button to pass. 10
5. A compact as claimed in any one of claims 2 to 4 wherein the tray is formed with a flange (58) about its upper end and the flange sits on the top of the frame. 15
6. A compact as claimed in claim 1 wherein the tray has a flange (110) about at least part of its upper end which comprises said means associated with the tray whereby on forcing the cover open beyond its usual limit of travel, the cam means (82) engages the flange and forces the tray up out of the recess. 20
7. A compact comprising: 25
- a) an open box-shaped base (12), having a recess (14) therein,
  - b) a frame (36) secured to the base about the recess and having downward panels extending into the recess along the front and back respectively, the panels being formed with spaced vertical slots to define a plurality of downward stubby flexible wings (44,46), at least one of the wings being formed with inward retaining ribs (50), at least one of the wings (46) being formed adjacent its lower end with an inwardly directed wedge (52) having an upwardly and rearwardly sloping upper surface spaced down from the top of the frame, said wing being also formed with a rearward button (52) on the back of the wing, the rear of the base being apertured to pass the button to the outside of the base, 30
  - c) a shallow tray (56) fitting into the recess, the tray having grooves (64) along the inward surfaces of its front and back sides resiliently and releasably receiving the retaining ribs to hold the tray in position in the frame, the tray superposing the wedge, 35
  - d) a cover (16) hinged to the base by hinge means and the common axis of the hinge means being above the button whereby if the cover is opened beyond a normal open position it engages the button to push the wedge under the tray to urge the tray up out of the frame and free of the retaining ribs. 40
8. A compact as claimed in claim 7 wherein an outward flange (58) is disposed about the top of the tray and the flange butts against the top of the frame. 45
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## EUROPEAN SEARCH REPORT

Application Number

EP 93 30 0265

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
D,A	US-A-1 597 378 (KENDALL) * page 1, line 53 - page 2, line 31; figures 1-10 * ---	1-4,7	A45D40/22
D,A	DE-A-3 626 743 (L'OREAL) * column 7, line 22 - column 9, line 49; figures 1-7 * ---	1-3,7	
A	EP-A-0 165 739 (KANEBO) * page 7, line 34 - page 8, line 21; figures 12-17 * ---	1,5-8	
A	EP-A-0 188 663 (POLYGRAM) * page 15, line 1 - page 16, line 8; figures 3,13-16 * ---	1,5,6	
A	US-A-2 642 202 (COWAN) * column 3, line 18 - line 47; figures 7,10,11 * -----	1	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			A45D
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 13 SEPTEMBER 1993	Examiner WILLIAMS M.J.
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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